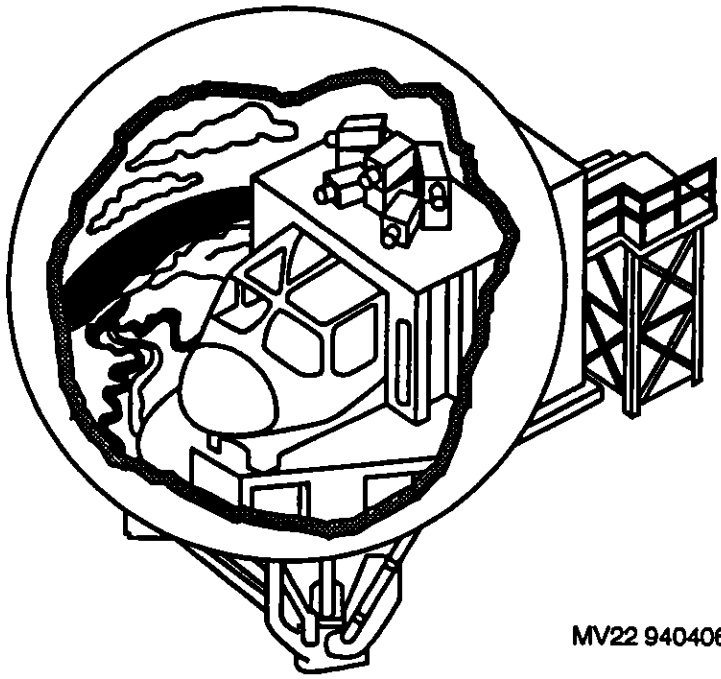
SUMMARY OF
MV-22B OPERATIONAL FLIGHT TRAINER

September 1994 — Device 2F151

NAVAL TRAINING SYSTEMS CENTER — ORLANDO, FLORIDA



MV22 94040601

TRAINING CATEGORY:

Flight Simulator

ORIGINATING AGENCY:

CNO/AIR

SECURITY CLASSIFICATION of DEVICE:

Device 2F151 is unclassified.

PURPOSE of DEVICE:

Device 2F151 simulates all ground takeoff, flight, operational and landing characteristics of the MV-22A Tilt Rotor aircraft.

INTENDED USE:

To provide training in the development of pilot skills as well as techniques to efficiently and safely fly the MV-22A in the medium assault troop transport mission.

The initial 2F151 is installed at MCAS, New River, North Carolina.

FUNCTIONAL DESCRIPTION:

The Operational Flight Trainer (OFT) simulates the aircraft performance during cockpit pre-flight, engine start, vertical/stationary takeoff and landing (V/STOL), navigation, landing engine shut down and cockpit postflight. The OFT provides full color visual cues through a seven channel 24 foot domed visual system. Motion cues are provided by a six degree of freedom motion system with a four hertz response capability. Additional motion cues are provided by the vibration subsystem. An audio system provides aural cueing.

The Student Station is a full scale replica of the aircraft cockpit. Device 2F151 has positions for both pilot and copilot, an instructor and two observers. The students (pilot and copilot) perform the functions

of flying, and the MV-22A OFT provides interactive feedback through the various cueing systems. Simulated aircraft controls provide the input mechanism for the device. Cueing systems provide feedback to the students.

A unique Instructors Station is located directly behind the student stations. The instructor has a direct view of both students and the out the window visual scene. This permits the instructor to evaluate both students as well as their crew coordination. The instructor controls the training scenario through a dual flat panel display. This display is menu driven through programmable switches located on the periphery of the displays.

PHYSICAL INFORMATION:

There are 66 units identified in the Trainer Configuration Report. These units are located in five areas. The floor space occupied by the device is listed below.

Sizes:

Trainee/Instructor area - 50' x 50', with a 45' ceiling.

Computer Room - 51' x 29', with a 9' ceiling.

Debrief/Workstation - 10' x 15', with a 9' ceiling.

Mechanical Room - 22' x 20', with a 9' ceiling.

Software Support Center - 8' x 12', with a 9' ceiling.

Weights:

The empty weight of the entire device is 61,000 pounds.

EQUIPMENT REQUIRED (NOT SUPPLIED):

none.

POWER REQUIREMENTS:

The device power requirements are listed below.

208/120 volt wye, 60 Hz.

Simulation Equipment - 90 amperes per phase, with a 125 ampere trip current.

Visual System - 180 amperes per phase, with a 225 ampere trip current.

480/277 volt wye, 60 Hz.

Cockpit Air Conditioner - 15 amperes per phase, with a 30 ampere trip current.

Visual Display Air Conditioner - 60 amperes per phase, with a 100 ampere trip current.

400 Hertz Converter - 30 amperes per phase, with a 50 ampere trip current.

Control Loading HPU - 26 amperes per phase, with a 50 ampere trip current.

Motion System HPU - 350 amperes per phase, with a 400 ampere trip current.

PUBLICATIONS FURNISHED:

Operation and Maintenance Instructions with Parts Catalog, MV-22A Operational Flight Trainer, Device 2F151, NTSC P-6758 (U)

PERSONNEL:

Instructor: Instructor Pilot.

Operator: Instructor operated.

Trainees: Two per training sortie.

Maintenance: Four simulator technicians to support an 8 hour training day.

CONTRACT IDENTIFICATION:

Manufactured by Hughes Training Inc., Herndon Virginia, under subcontract to Bell Helicopter Textron Inc., Fort Worth, TX. The Prime Contract number is N00019-85-C-0145.